

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) An OVPN system comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins an OVPN (Optical Virtual Private Network) and a second signal format which is used in the OVPN are different from each other; and

an OVPN terminating device for ~~containing~~ communicating with the user's device, wherein

the OVPN terminating device is provided with:

a registering section from the user's device for a first signal format type which is used in the user's device together with an IP address of the user's device and a VPNID;

a notifying section for notifying contents of the registration to other OVPN terminating device which controls the same VPNID as the user's device;

a retrieving section for the first signal format type which corresponds to the IP address and the VPNID in the user's device according to a calling connection request from the user's device by referring to the information which is registered by the registering section, and

a selecting section for selecting the first signal format which is used by the user's device according to a result in the retrieving section when data is transported from the user's device,

wherein the registering section is provided with a section for registering a port identifier for the user's own device and a port identifier for the OVPN terminating device or an interface identifier which corresponds to at least a first signal format which is used in the user's device together with the IP address of the user's device and the VPNID.

2. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with a user's device which joins an OVPN comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a registering section from the user's device for a first signal format type which is used in the user's device together with an IP address of the user's device and a VPNID;

a notifying section for notifying contents of the registration to other OVPN terminating device which controls the same VPNID as the user's device;

a retrieving section for the first signal format type which corresponds to the IP address and the VPNID in the user's device according to a calling connection request from the user's device by referring to the information which is registered by the registering section, and

a selecting section for selecting the first signal format which is used by the user's device according to a result in the retrieving section when data is transported from the user's device;

wherein the registering section is provided with a section for registering a port identifier for the user's own device and a port identifier for the OVPN terminating device or an interface identifier which corresponds to at least a first signal format which is used in the user's device together with the IP address of the user's device and the VPNID.

3. (Currently Amended) An OVPN system comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins an OVPN (Optical Virtual Private Network) and a second signal format which is used in the OVPN are different from each other; and

an OVPN terminating device for ~~containing~~ communicating with the user's device wherein the OVPN terminating device is provided with:

a registering section for registering a first signal format type which is sent from the user's device so as to be used in the user's device together with an IP address of the user's device and a VPNID;

a notifying section for notifying the registered contents to other OVPN terminating device which controls a device which receives a calling connection request when the calling connection request arrives from the user's device;

a selecting section for selecting the first signal format which is used by a user's device which is accommodated by the OVPN terminating device and which is a destination of a calling connection request transmitted from a user's device accommodated by the other OVPN terminating device for communication with the user's device accommodated by the other OVPN terminating device with reference to the registered contents notified from the other OVPN terminating device;

a receiving and selecting section which receives the first signal format type information which is used in the device which receives the calling connection request from the other OVPN terminating device so as to respond to a notice from the notifying section and selects the first signal format type which is used in the user's device according to the format type information.

4. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with a user's device which joins an OVPN comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a registering section for registering a first signal format type which is sent from the user's device so as to be used in the user's device together with an IP address of the user's device and a VPNID;

a notifying section for notifying the registered contents to other OVPN terminating device which controls a device which receives a calling connection request when the calling connection request arrives from the user's device;

a selecting section for selecting the first signal format which is used by a user's device which is accommodated by the OVPN terminating device and which is a destination of a calling connection request transmitted from a user's device accommodated by the other OVPN terminating device for communication with the user's device accommodated by the other OVPN terminating device with reference to the registered contents notified from the other OVPN terminating device;

a receiving and selecting section which receives the first signal format type information which is used in the device which receives the calling connection request from the other OVPN terminating device so as to respond to a notice from the notifying section and selects the first signal format type which is used in the user's device according to the format type information.

5. (Currently Amended) An OVPN system comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins an OVPN (Optical Virtual Private Network) and a second signal format which is used in the OVPN are different from each other; and

an OVPN terminating device for ~~containing~~ communicating with the user's device, wherein

the OVPN terminating device is provided with:

a registering section for registering at least a first signal format type which is sent from the user's device so as to be used in the user's device together with an IP address of the user's device and a VPNID;

a notifying and selecting section for notifying the registered contents to other OVPN terminating device which controls the device which receives the calling connection request from the user's device when the calling connection request arrives from the user's device and selecting the first signal format type which can be used in the user's device handled between other OVPN terminating device and the own OVPN terminating device commonly according to the registered contents;

a retrieving section which retrieves information indicating a vacancy of the converting section for the alternate converting operation both in the own OVPN terminating device and other OVPN device when the first signal format type which is selected by the selecting section is different from a second signal format type; and

a selecting section which selects at least either one of the converting section for the alternate converting operation which is not occupied for the own OVPN terminating device and other OVPN device according to the retrieving result by the retrieving section.

6. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with the user's device comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second

signal format alternately under conditions in which the first signal format which is used by a user's device which joins an OVPN and a second signal format which is used in the OVPN are different from each other;

a registering section for registering at least a first signal format type which is sent from the user's device so as to be used in the user's device together with an IP address of the user's device and a VPNID;

a notifying and selecting section for notifying the registered contents to other OVPN terminating device which controls the device which receives the calling connection request from the user's device when the calling connection request arrives from the user's device and selecting the first signal format type which can be used in the user's device handled between other OVPN terminating device and the own OVPN terminating device commonly according to the registered contents;

a retrieving section which retrieves information indicating a vacancy of the converting section for the alternate converting operation both in the own OVPN terminating device and other OVPN device when the first signal format type which is selected by the selecting section is different from a second signal format type; and

a selecting section which selects at least either one of the converting section for the alternate converting operation which is not occupied for the own OVPN terminating device and other OVPN device according to the retrieving result by the retrieving section.

7. (Previously Presented) An OVPN terminating device according to Claim 4 or 6 wherein the registering section is provided with a section for registering a port

identifier for the user's own device which corresponds to at least a first signal format which is used in the user's device or an interface identifier together with the IP address of the user's device and the VPNID.

8. (Previously Presented) An OVPN terminating device according to Claim 2 which contains the converting section for the alternate converting operation in the user's own device.

9. (Currently Amended) An OVPN system comprising:
a plurality of OVPN terminating devices which accommodate user's devices and which are not provided with sections for converting a first signal format and a second signal format alternately; and

a plurality of collective converting devices,
wherein each of the collective converting devices comprises a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins an OVPN and a second signal format which is used in the OVPN are different from each other, the converting sections being commonly used by the plurality of OVPN terminating devices and

each of the OVPN terminating devices selects the collective converting device which is disposed nearest to each of the OVPN terminating devices, and

if the collective converting device which is disposed nearest to each of the OVPN terminating devices is occupied, each of the OVPN terminating devices selects the next nearest collective converting device.

10. (Previously Presented) An optical communication network which is provided with an OVPN system according to Claim 9.

11 –12. (Cancelled)

13. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with a user's device which joins an OVPN comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a retrieving section for detecting whether or not there is a section for performing the alternate converting operation so as to correspond to the signal format type under condition the first signal format is different from the second signal format when the first signal format type information which is used in the user's device is received;

a generating section for generating an IP address and a VPNID to the user's device when there is a section for performing the alternate converting operation as a result of the retrieving operation by the retrieving section;

a registering section for registering the IP address, the VPNID generated by the generating section, and the first signal format type information which is used by the user's device to which the IP address and the VPNID are added; and

a notifying section for notifying first signal format type information which corresponds to a vacant converting section for performing the alternate converting operation to the user's device when the retrieving result in the retrieving section indicates that there is not a section for performing the alternate converting operation,

wherein in the case in which the user's device is notified of the first signal format type information, if it is possible for the user's device to change the first signal format type to another first signal format type corresponding to the first signal format type information, the registration is performed for the other first signal format type, and if it is not possible for the user's device to change the first signal format type to the other first signal format type, the registration is performed for the first signal format type after a certain period of time.

14. (Currently Amended) An OVPN terminating device according to Claim 13 comprising:

a selecting section for selecting a signal format which is used by the user who receives the calling connection request according to the first signal format type information which is used by the user's device having the IP address, included in the calling connection request, from which the calling connection request is transmitted when the calling connection request is received ~~from~~ from the user's device; and

a transmitting section for transmitting the format type information which is selected by the selecting section to the user who receives the calling connection request together with the calling connection request.

15. (Original) An OVPN terminating device according to Claim 14 further comprising a notifying section which receives a response to the calling connection request so as to determine whether or not the signal format which is used by the user's device and the signal format which is employed by the user who receives the calling connection request coincides and notify that the signal formats do not coincide each other for setting up a circuit to the user's device.

16. (Cancelled)

17. (Original) An OVPN terminating device according to Claim 13 comprising:
an inquiring section for inquiring whether or not it is possible to change the vacant converting section for performing the alternate converting operation to other user's device which is under operation when the retrieving result by the retrieving section indicates that there is not a section for performing the alternate converting operation; and

a requesting and generating section for requesting for changing the converting section for performing the alternate converting operation to other user device when the retrieving result by the retrieving section indicates that there is a section for performing

the alternate converting operation and generating the IP address and the VPNID for the user's device.

18. (Currently Amended) A base point device which is disposed between the OVPN system according to Claim 1 and the user's device which ~~is contained in~~ communicates with the OVPN system or ~~[[in]]~~ with an OVPN terminating device or between the OVPN system according to Claim 1 and the OVPN terminating device comprising:

- a determining section for determining a first signal format type which is used in the user's device;

- a transmitting section for transmitting the format type information which is determined by the determining section to the OVPN terminating device; and

- a maintaining section for maintaining the generated IP address and the VPNID.

19. (Currently Amended) An OVPN system comprising:

- a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins an OVPN and a second signal format which is used in the OVPN are different from each other;

- an OVPN terminating device for ~~containing~~ communicating with the user's device, wherein the OVPN terminating device is provided with:

a retrieving section for detecting whether or not there are converting sections which correspond to a plurality of the signal format types under condition the first signal format is different from the second signal format when the first signal format type information which is used in the user's device is received;

a generating section for generating a plurality of IP addresses which correspond to a plurality of format types and a VPNID to the user's device when there is a detected converting section for performing the alternate converting operation as a result of the retrieving operation by the retrieving section; and

a registering section for registering the VPNID which is added by the generating section, a plurality of IP addresses, and a plurality of the first signal format type information which are used by the user's device to which the VPNID and a plurality of the IP addresses are added; and

a section for employing a converting section which corresponds to the IP address which is contained in the calling connection request which is transmitted for a communication following the calling connection request by referring to the registering section when the calling connection request arrives from the user's device.

20. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with a user's device which joins an OVPN comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used

by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a retrieving section for detecting whether or not there are converting sections which correspond to a plurality of the signal format types under condition the first signal format is different from the second signal format when the first signal format type information which is used in the user's device is received;

a generating section for generating a plurality of IP addresses which correspond to a plurality of format types and a VPNID to the user's device when there is a detected converting section for performing the alternate converting operation as a result of the retrieving operation by the retrieving section; and

a registering section for registering the VPNID which is added by the generating section, a plurality of IP addresses, and a plurality of the first signal format type information which are used by the user's device to which the VPNID and a plurality of the IP addresses are added; and

a section for employing a converting section which correspond to the IP address which is contained in the calling connection request which is transmitted for a communication following the calling connection request by referring to the registering section when the calling connection request arrives from the user's device.

21. (Previously Presented) A base point device which is disposed between the user's device and the OVPN system according to Claim 19 which accommodates the user's device or between the user's device and the OVPN terminating device which accommodates the user's device, the base point device comprising:

a determining section for determining a first signal format type which is used in the user's device;

a transmitting section for transmitting the format type information which is determined by the determining section to the OVPN terminating device; and

a maintaining section for maintaining the plurality of generated IP addresses, the VPNID, and a plurality of the first signal format type information.

22. (Previously Presented) An OVPN terminating device according to any one of Claim 13, 14, 15, 17, or 20 which is provided with the converting section for performing the alternate converting operations in the user's own device.

23. (Previously Presented) A base point device according to Claim 18 which is provided with:

a separating section for separating the user's device and the OVPN; and

a returning section for returning a test beam which is transmitted from the OVPN back to the OVPN.

24 – 25. (Cancelled)

26. (Previously Presented) An OVPN system according to Claim 13, further comprising a receiving and determining section for receiving at least a test signal which is transmitted via a data channel by using the IP address from the user's device and determining at least the first signal format type which belongs to the user's device.

27. (Currently Amended) An OVPN terminating device for ~~containing~~
communicating with a user's device which joins an OVPN comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a detecting section for detecting whether or not the user's device is connected;

a generating section for adding the IP address and the VPNID to the user's device according to a control channel when the retrieving result in the detecting section indicates that the user's device is connected;

a receiving and determining section for receiving at least a test signal which is transmitted via a data channel by using the IP address from the user's device and determining at least the first signal format type which belongs to the user's device;

a retrieving section for retrieving whether or not there is a converting section for performing the alternate converting operation so as to correspond to the format type according to the determining result by the determining section when the first signal format type which is used by the user's device is different from the second signal format type; and

a registering section for registering the IP address and the VPNID which are added by the generating section, and the first signal format type information which is determined by the determining section which is used by the user's device to which the

VPNID and the IP address are added when the retrieving result by the retrieving section indicates that there is a converting section for performing the alternate converting operation.

28. (Original) An OVPN terminating device according to Claim 27 wherein the registering section is provided with a registering section for registering a port identifier or an interface identifier for the user's own device which corresponds to at least a first signal format which is used in the user's device commonly.

29. (Original) An OVPN terminating device according to Claim 27 or 28 which is provided with a converting section for performing the alternate converting operation in the user's own device.

30. (Currently Amended) A base point device which is disposed between the OVPN terminating device according to Claim 27 and the user's device which is ~~contained in~~ communicates with the OVPN terminating device comprising:

a detecting section for detecting whether or not the user's device is connected to the base point device;

a receiving and maintaining section for receiving the IP address and the VPNID which are added to the base point device via the control channel from the OVPN terminating device; and

a transmitting section for transmitting the test signal for at least the first signal format which is used by the user's device to the OVPN terminating device via the data channel after the IP address and the VPNID are added to the base point device.

31. (Original) A base point device according to Claim 30 which is provided with:

a separating section for separating the user's device and the OVPN; and

a returning section for returning a test beam which is transmitted from the OVPN back to the OVPN.

32 – 39. (Cancelled)

40. (Previously Presented) An OVPN system according to Claim 13, further comprising:

a transmitting section for transmitting the first signal format which is transmitted from the user's device to the OVPN by encapsulating the first signal format by the second signal format, and

a transmitting section for transmitting the encapsulated signal which is encapsulated by the second signal format which is transmitted from the OVPN to the user's device by de-encapsulating according to the first signal format.

41. (Original) An OVPN system according to Claim 40 wherein the transmitting section to the OVPN is provided with a multiplying section for multiplying a plurality of signals according to the second signal format.

42. (Original) An OVPN system according to Claim 40 wherein the transmitting section to the OVPN is provided with a dividing and encapsulating section for dividing and encapsulating a series of signals according to the first signal format into a plurality of signals according to the second signal format.

43. (Previously Presented) An OVPN system comprising:
a plurality of optical cross connecting devices; and
a plurality of collective converting devices,
wherein each of the collective converting devices comprises:
a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format in a layer 1 which is employed in a user's device which joins an OVPN and a second signal format which is utilized in an upper layer than the layer 1 which is employed in the OVPN alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and the second signal format which is used in the OVPN are different from each other and
the converting section for performing the alternate converting operation is provided with:

a transmitting section for transmitting the first signal format which is transmitted from the user's device to the OVPN by encapsulating the first signal format by the second signal format; and a transmitting section for transmitting the encapsulated signal which is encapsulated by the second signal format which is transmitted from the OVPN to the user's device by de-encapsulating to the first signal format, and

the converting sections are commonly used by the plurality of optical cross connecting devices, and

each of the optical cross connecting devices selects the collective converting device which is disposed nearest to each of the optical cross connecting devices.

44. (Previously Presented) An OVPN system according to Claim 43, wherein the transmitting section to the OVPN is provided with a multiplying section for multiplying a plurality of signals according to the second signal format.

45. (Previously Presented) An OVPN system according to Claim 43, wherein the transmitting section to the OVPN is provided with a dividing and encapsulating section for dividing and encapsulating a series of signals according to the first signal format into a plurality of signals according to the second signal format.

46. (Cancelled)

47. (Previously Presented) An optical communication network which is provided with an OVPN system according to Claim 43.

48. (Previously Presented) An OVPN system according to Claim 13, further comprising a receiving and transmitting section for receiving a notice that the user's device is connected to the base point device via the control channel from the base point device which is disposed between the user's device and the OVPN and transmitting the IP address and the VPNID which are allocated to the user's device according to the base point device.

49. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with a user's device which joins an OVPN comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other; ~~[[and]]~~

a receiving and transmitting section for receiving a notice that the user's device is connected to ~~[[the]]~~ a base point device via the control channel from the base point device which is disposed between the user's device and the OVPN and transmitting the IP address and the VPNID which are allocated to the user's device to the base point device;

a receiving section for receiving a receipt confirmation for the IP address and the VPNID which are transmitted by the receiving and transmitting section; and

a transmitting section for transmitting a final connection confirmation for notifying the receipt of the receipt confirmation by the receiving section to the base point device.

50. (Cancelled)

51. (Currently Amended) An OVPN terminating device according to Claim 49 [[or 50]] comprising:

a receiving and retrieving section for receiving the first signal format type information which is employed by the user's device according to the control channel after the final connection confirmation is transmitted so as to retrieving whether or not there is a converting section for performing the alternate converting operation so as to correspond to the format type; and

a registering section for registering the IP address and the VPNID which are allocated to the user's device, and the first signal format type information which is employed by the user's device when the retrieving result in the receiving and registering section indicates that there is a converting section for performing the alternate converting operation.

52. (Previously Presented) An OVPN terminating device according to Claim 49, which is provided with the converting section for performing the alternate converting operation in the OVPN terminating device.

53. (Currently Amended) A base point device which is disposed between the OVPN terminating device according to Claim 49 and a user's device which ~~is contained in~~ communicates with the OVPN terminating device comprising:

a detecting section for detecting whether or not the user's device is connected to the base point device;

a notifying section for notifying at least one of the OVPN terminating device via the control channel that it is detected that the user's device is connected to the base point device;

a receiving section for receiving the IP address and the VPNID which are allocated to the user's device from the OVPN terminating device via the control channel;

a transmitting section for transmitting a receipt confirmation that the receiving section received the IP address and the VPNID to the OVPN terminating device; and

a transmitting section the first signal format type information which is used by the user's device, the IP address, and the VPNID to the OVPN terminating device which received the final connection receipt for the receipt confirmation via the control channel.

54. (Original) A base point device according to Claim 53 comprising:

a determining section for determining the first signal format type information which is employed in the user's device; and

a transmitting device for transmitting the format type information which is determined by the determining section to the OVPN terminating device.

55. (Previously Presented) A base point device according to Claim 53 comprising:

a separating section for separating the user's device and the OVPN; and

a returning section for returning a test beam which is emitted from the OVPN back to the OVPN.

56 – 57. (Cancelled)

58. (Previously Presented) A base point device which is disposed between an OVPN and a user's device comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a multiplying and transmitting section for multiplying and transmitting a plurality of optical wavelength signals which are used in a plurality of the user's devices to the OVPN;

a separating and transmitting section for separating and transmitting the multiplied optical wavelength signals which arrive from the OVPN to the user's devices; and

a notifying section for notifying the OVPN of wavelength information and information for the wavelengths which are transmitted under a multiplied condition so as to be used in the user's devices.

59. (Currently Amended) An OVPN terminating device for ~~containing~~ communicating with the user's device via the base point device according to Claim 58 comprising:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a multiplying and transmitting section for multiplying and transmitting a plurality of optical wavelength signals which are used in the user's device to the OVPN; and

a separating and transmitting section for separating and transmitting the multiplied optical wavelength signals which arrive from the base point device so as to transmit to a predetermined course according to information which is notified from the notifying section.

60. (Currently Amended) An OVPN system comprising:

[[A]] a base point device which is disposed between an OVPN and a user's device; and

an OVPN terminating device which communicates with the user's device via the base point device,

wherein the base point device comprises~~comprising~~:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a converting and transmitting section for converting a serial signal which is transmitted from the user's device into a plurality of parallel signals so as to transmit to the OVPN;

a converting and transmitting section for converting a plurality of the parallel signals which arrive from the OVPN into a serial signal so as to transmit to the user's device; and

a notifying section for notifying the OVPN of information for the topology of the parallel signals and information that the serial signals are converted to the parallel signals, and

the OVPN terminating device comprises:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other; and

an inputting section for inputting the parallel signals which are divided from a series of serial signals into the plurality of converting sections for performing the alternate converting operation so as to correspond to the first signal format type information according to the information which is notified from the notifying section in the base point device.

61. (Cancelled)

62. (Currently Amended) An OVPN system comprising:

[[A]] a base point device which is disposed between an OVPN and a user's device; and

an OVPN terminating device which communicates with the user's device via the base point device,

wherein the base point device comprises~~comprising~~:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a multiplying and transmitting section for multiplying the parallel signal which is converted from the serial signal which is transmitted from the user's device so as to transmit to the OVPN;

a separating and transmitting section for separating the multiplied wavelength signals which arrive from the OVPN into the parallel signals and converting the parallel signals into the serial signals so as to transmit to the user's device; and

a notifying section for notifying the OVPN of the information that the serial signals are converted to the parallel signals, the information for a topology of the parallel signals, and the information that the parallel signals are transmitted under wavelength-multiplied condition, and

the OVPN terminating device comprises:

a plurality of converting sections, which are disposed so as to correspond to plural different first signal formats, for converting a first signal format and a second signal format alternately under conditions in which the first signal format which is used by a user's device which joins the OVPN and a second signal format which is used in the OVPN are different from each other;

a multiplying and transmitting section for multiplying the parallel signals which arrive from the OVPN so as to transmit to the base point device;

a separating and transmitting section for separating the multiplied optical wavelength signals which arrive from the base point device so as to transmit to the OVPN as the parallel signals; and

an inputting section for inputting the parallel signals which are divided from the multiplied wavelength signals into the plurality of converting sections for performing the alternate converting operation so as to correspond to the first signal format type information according to the information which is notified from the notifying section in the base point device.

63 – 65. (Cancelled)

66. (Currently Amended) An OVPN terminating device according to ~~any one of Claims~~ Claim 59, 61, or 63 which is provided with the converting section for performing the alternate converting operation in the OVPN terminating device.

67. (Original) A base point device according to any one of Claim 58, 60, or 62 which is provided with:

a separating section for separating the user's device and the OVPN; and

a returning section for returning a test beam which is transmitted from the OVPN back to the OVPN.

68. (Cancelled)

69. (Previously Presented) An optical communication network which is provided with an OVPN terminating device according to any one of Claims 2, 13, 27, 49, and 59.

70 – 74. (Cancelled)

75. (Previously Presented) The OVPN system according to any one of Claims 1, 19, 26, 40, and 48 residing in an optical communication network.

76. (Previously Presented) The base point device according to any one of Claims 18, 30, 53, and 58 residing in an optical communication network.